1   QUINN EMANUEL URQUHART & SULLIVAN, LLP
      Charles K. Verhoeven (Bar No. 170151)
2      charlesverhoeven@quinnemanuel.com
      David A. Perlson (Bar No. 209502)
3      davidperlson@quinnemanuel.com
      Melissa Baily (Bar No. 237649)
4      melissabaily@quinnemanuel.com
      John Neukom (Bar No. 275887)
5      johnneukom@quinnemanuel.com
      Jordan Jaffe (Bar No. 254886)
6      jordanjaffe@quinnemanuel.com
    50 California Street, 22nd Floor
7   San Francisco, California 94111-4788
    Telephone:     (415) 875-6600
8   Facsimile:     (415) 875-6700

9   Attorneys for WAYMO LLC

10                      UNITED STATES DISTRICT COURT

11        NORTHERN DISTRICT OF CALIFORNIA, SAN FRANCISCO DIVISION

12   WAYMO LLC,                          CASE NO. 3:17-cv-00939-WHA

13                 Plaintiff,            **PLAINTIFF WAYMO LLC'S
                                         OPPOSITION TO DEFENDANTS' UBER
14          vs.                          TECHNOLOGIES, INC. AND
                                         OTTOMOTTO LLC'S MOTION *IN
15   UBER TECHNOLOGIES, INC.;            LIMINE* NO. 27 TO EXCLUDE PROF.
     OTTOMOTTO LLC,                      HESSELINK'S SAVED DEVELOPMENT
16                                       TIME OPINIONS**
                   Defendants.
17                                       Judge: The Honorable William Alsup
                                         Trial Date: December 4, 2017
18

19
                                         **REDACTED VERSION OF DOCUMENT
20                                       SOUGHT TO BE FILED UNDER SEAL**

21

22

23

24

25

26

27

28

1    Waymo responds to Defendants' motion to exclude Prof. Hesselink's saved development

2  time opinions (Dkt. 2198-3).  This is Defendants' fifth motion to exclude portions of Prof.

3  Hesselink's opinions, and it is untimely under the parties' agreement to bring *Daubert* motions by

4  September 16.  Prof. Hesselink had already offered his saved development time opinions then, but

5  Defendants elected not to bring a motion to exclude them.  Dkts. 1611; 1614.  Now, months later,

6  Defendants latch on to one line in the Court's *Daubert* order regarding Mr. Wagner to try to

7  exclude yet another aspect of Prof. Hesselink's opinions.  In doing so, Defendants mischaracterize

8  Prof. Hesselink's expertise, his actual opinions, and Waymo's contentions.  Defendants also

9  ignore their own expert's qualifications and opinions.  The parties' competing expert opinions on

10  saved development time should be resolved by the jury, not the Court on the eve of trial.

11  **I.      DEFENDANTS' MOTION IS UNTIMELY**

12    After lengthy negotiations, the parties agreed that they would file *Daubert* motions on

13  September 16.  Dkt. 2015-7.  Waymo kept to its word.  Dkt. 1607.  Defendants appeared to keep to

14  the agreement too, filing a number of *Daubert* motions the same day.  Dkts. 1611; 1614.  Months

15  later and only three weeks before trial, however, Defendants seek to bring other *Daubert* challenges

16  based entirely on opinions offered well before the parties' agreed deadline.  Defendants' latest

17  *Daubert* motion should be denied as untimely.  *See* Dkt. 2218 (denying precis requesting motion to

18  exclude opinions regarding Trade Secret 25).

19  **II.     DEFENDANTS' ATTEMPT TO DISQUALIFY PROF. HESSELINK BASED ON**
    **HIS QUALIFICATIONS IS BASELESS**

20
    Defendants claim that Prof. Hesselink is not qualified to offer opinions regarding Uber's AV

21  timeline being accelerated by using Waymo's trade secrets because he has never developed a self-

22  driving car.  But having developed a self-driving car is not the standard to provide technical opinions

23  on the subject matter of the asserted trade secrets. *See, e.g.*, *Asetek Danmark A/S v. CMI USA, Inc.*,

24  No. 13-cv-00457-JST, 2014 U.S. Dist. LEXIS 155452, at *5-7 (N.D. Cal. Nov. 2, 2014) (permitting

25  expert with experience in thermodynamics to testify regarding computer liquid cooling even though

26  he had never specifically worked on liquid cooling for computer platforms); *Todd v. Tempur-Sealy*

27  *Int'l, Inc.*, No. 13-cv-049848-JST, 2016 U.S. Dist. LEXIS 134927, at *17 (N.D. Cal. Sept. 28, 2016)

28

WAYMO'S OPPOSITION TO DEFENDANTS' MIL NO. 27 TO EXCLUDE HESSELINK SAVED DEVELOPMENT TIME OPINIONS

1   (denying motion to exclude witness on ground that her experience involving toxic chemicals was

2   with pesticides, not the household products at issue, because her qualifications were in the same or

3   directly-related field).

4          Under the relevant standard, Prof. Hesselink is well-qualified to offer his opinions.  He has

5   two bachelors degrees in applied physics and applied mechanics, a masters from Caltech in Applied

6   Mechanics and Physics, and a Ph.D. from Caltech in Applied Mechanics and Physics/Applied

7   Physics.  He has almost 30 years of expertise in the technology of optical and hybrid optical/software

8   systems, including an intimate knowledge of LiDAR and work in the development of lasers for

9   distance measurements.  In addition, he gained personal experience developing technology with

10   patented and trade secret features by serving as Chief Technology Officer of Senvid, a company that

11   designed secure peer-to-peer secure technology and that was ultimately purchased by Western

12   Digital.  He also served as CTO Branded Products at Western Digital.  *See* Ex. 1.

13          In his report, Prof. Hesselink described a typical engineering design process, which was

14   developed by the Stanford Design School, the leading proponent of well-organized design and

15   product development processes, and which he personally used at Senvid, Western Digital and

16   other companies.  Ex. 2 (8/24/2017 Hesselink Report ("Op. Rep.")) ¶ 35.  That design process is a

17   multi-step, complex effort, requiring engagement, evaluation, and back-and-forth discussion

18   producing potential solutions and multiple prototypes that are then tested.  *Id.* ¶¶ 34-43.

19          Prof. Hesselink further surveyed Waymo's own R&D process specific to self-driving cars,

20   including the amount of work and number of approaches that were required in the development of

21   Waymo's LiDAR sensor.  For instance, Prof. Hesselink noted that "[a]s with any optical system

22   design, even knowing the desired specifications for the LiDAR, much work remains to be done,

23   and design approaches that initially appear promising often prove not to work.  This was true of

24   Waymo's development of PBr.  Specifically, Mr. Droz's team devoted a year of work into

25   different possibilities, beginning with ███████████████████████████████████████

26   ████████, and trying ███████████████████████████████████." *Id.* ¶ 49.

27          Using his design process experience, including in the design of technology employing

28   numerous trade secrets, as well as his expertise in optical engineering and software products and

his review of Waymo's R&D process of the LiDAR sensor, *id.* ¶¶ 44-59, Prof. Hesselink properly

offered opinions on the "head start" Uber would get from misappropriating Trade Secrets 25, 90

and 111 and commented on the amount of time Defendants contended it would take to "redesign"

around the other elected trade secrets.  *Id.* ¶¶ 62-63.

In addition, Prof. Hesselink testified at length regarding his understanding of autonomous

vehicle design cycles and Uber's ability to independently develop autonomous vehicle technology

similar to Waymo's.  *See, e.g.*, Ex. 3 (9/26/2017 Hesselink Tr.) at 177:10-180:10 (describing

necessity to drive vehicles millions of miles in order to properly develop algorithms required for

autonomous driving); Ex. 4 (11/10/2017 Hesselink Tr.) at 325:16-329:6 (describing length of

process for designing LiDAR system for autonomous vehicle).  Prof. Hesselink's opinion on saved

development time should not be excluded on the basis of his qualifications.[1]

## III.    PROF. HESSELINK'S OPINIONS ARE THE PRODUCT OF RELIABLE METHODOLOGY

Far from emerging from a "black box" (MIL at 2), Prof. Hesselink's opinions are the

product of detailed analysis that is laid out in his expert reports.  As described in Part II, Prof.

Hesselink detailed the design process and provided an overview of Waymo's development history

creating the asserted trade secrets.  Prof. Hesselink then offers two different opinions.

First, for Trade Secrets 25, 90 and 111, Prof. Hesselink offers an estimated "head start"

that Defendants would receive by misappropriating the trade secret.  Dkt. 2201-4 at ¶ 62.  With

respect to the fiber laser technology,  Prof. Hesselink based this opinion on his optical engineering

and LiDAR expertise, his knowledge of and experience with the relevant design process, his

analysis of Waymo's own AV development timeline, and the development time incurred by

Levandowski's shell company, Tyto LiDAR.  *Id.*  ¶¶ 457, 458.  With respect to Trade Secret 25,

Prof. Hesselink reviewed the relevant sensing parameters and use cases, discussed their

relationship to overall LiDAR design based on his experience with LiDAR and with the relevant

design process, and drew on facts related to Waymo's own design process.  *Id.* ¶ 455.  And with

---

[1]   Defendants' attempt to characterize Prof. Hesselink as an advocate is similarly misplaced—as Defendants are well aware.  *See* Ex. 4 at 307:20-309:22.

1    respect to Trade Secret 111, Prof. Hesselink noted his opinion, based on his experience in the

2    optical engineering industry, that "there is no settled approach to the design of medium-/long-

3    range LiDAR sensor design" and explained how a company independently developing LiDAR

4    technology would need to devote time to ███████████████████████████████████████

5    ███████, referring both to Waymo's own R&D effort and Defendants' own development timeline

6    for a mid-range LIDAR device.  *Id.* ¶¶ 52, 125, 147-152.

7         Second, Prof. Hesselink offered opinions concerning Defendants' alleged "design arounds"

8    for Trade Secrets 2, 7, 9, 13, and 14.  Prof. Hesselink opines that these times do not reflect the

9    time necessary to independently develop the trade secrets, because, as Defendants' own witness

10   admits, they are based on an assumption that the redesign would be a "straight path design" from

11   the misappropriated design—without any trial and error at all.  *Id.* ¶ 463.  Prof. Hesselink draws

12   on his own LiDAR expertise, experience with the relevant design process, and evidence related to

13   Waymo's and Uber's development to explain how such redesign times would underestimate the

14   time necessary to independently develop the asserted trade secrets from scratch.  *Id.* ¶ 463.

15        In his Reply Report, Prof. Hesselink then responded to ***Defendants' experts' opinions*** that

16   merely parroted Defendants' interrogatory responses on redesign time.  Prof. Hesselink correctly

17   pointed out that: "a LiDAR device is a closely coupled engineering device.  Design decisions

18   made throughout the system for one element of the system are impacted by design decisions

19   elsewhere.  Benefits obtained from use of Trade Secret features affect other aspects of the system,

20   and have carry-on effects throughout the entire design."  Ex. 5 (Rep. Rep.) ¶ 279.  He further

21   pointed out that Defendants' experts' opinion "fails to account for the possibility that even if the

22   manpower was available to accomplish the necessary work in parallel, certain design aspects rely

23   on the completion of one task before the other can be started."  *Id.* ¶ 281.  Finally, Prof. Hesselink

24   explains how changes in the LiDAR design will affect the overall development timeline.  *Id.* ¶¶

25   282-283.  These opinions are appropriately grounded in Prof. Hesselink's experience with LiDAR

26   and the relevant design process along with his review of the evidence in this case.

27        Defendants' reliance on this Court's exclusion of Mr. Wagner's saved development time

28   testimony is misplaced.  Dkt. 2202.  Defendants ignore the ten pages in Prof. Hesselink's Opening

1    Report that discuss the trial-and-error process in optical system design and development, which he

2    also teaches at Stanford, on which he based his opinion saved development time opinions.  *See* Ex.

3    2 (Op. Rep.) ¶¶ 34-59.  This trial-and-error methodology is of a type regularly used by engineering

4    experts.  *See, e.g., Johnson v. Simonton Bldg. Prods.*, No. 08-2198-CM-DJW, 2011 U.S. Dist.

5    LEXIS 7671, at *41 (D. Kan. Jan. 26, 2011) (summarizing expert's opinion that trial and error

6    process is routine in mechanical engineering design).  Furthermore, Prof. Hesselink's opinion that

7    an overly quick development time reflects the time saved from misappropriation of trade secrets is

8    similarly proper.  *Ajaxo Inc. v. E*Trade Grp. Inc.*, 135 Cal. App. 4th 21, 68 (Cal. Ct. App. 2005)

9    (remanding for new trial on damages where substantial evidence existed from which jury could

10   have concluded that third party to whom defendant disclosed trade secret could not have

11   independently developed the technology at issue in the relevant time frame).

12   **IV.     DEFENDANTS MISCHARACTERIZE PROF. HESSELINK'S OPINIONS**

13          Defendants argue that Prof. Hesselink's opinions would lead to the result that, on three

14   trade secrets alone, Uber saved over five years of development time in its overall AV timeline.

15   But Prof. Hesselink never offered such an opinion.  Defendants conflate the two different sets of

16   opinions that Prof. Hesselink offered, as described above.  Prof. Hesselink explains that certain

17   design aspects cannot be completed in parallel, because one needs to be completed before the

18   other is started.  Ex. 5 (Rep. Rep.) ¶ 281.  He further explains *why* LiDAR redesigns will impact

19   the overall self-driving car solution and provides specific examples.  *See id.* ¶¶ 279, 283.  Prof.

20   Hesselink does not state, as Defendants contend, that the calculation for saved development time

21   for each trade secret must start only after the conclusion of the saved development time for another

22   trade secret.  To the contrary, Prof. Hesselink tethers his saved development time opinions to each

23   particular trade secret.  Tellingly, Defendants never cite to where Prof. Hesselink describes this

24   purported bottleneck approach, because the only applicable paragraph, *id.* ¶ 282, is actually a

25   response to Defendants' experts' proposed re-design times.

26   **V.      DEFENDANTS' OWN EXPERT REPORTS SHOW PROF. HESSELINK'S**
         **OPINIONS ARE PROPER**

27

28

1    Defendants fail to acknowledge that their own technical experts provide diametrically

2  opposite opinions based on even less evidence—ignoring even the obviously relevant evidence in

3  this case (Waymo's own R&D timeline, Uber's analyses, etc.).  For example, Defendants fault

4  Prof. Hesselink for not conducting any "design cycle analysis."  MIL 2.  Yet, Defendants' own

5  expert Dr. Lebby, bereft of any self driving car experience,[2] offers no analysis of the Uber design

6  cycle in support of his opinion that "[t]he time necessary for Uber to complete its proposed

7  redesigns is not cumulative."  Ex. 7 (Lebby Op. Rep.) ¶ 378.  Similarly, Defendants' expert Dr.

8  McManamon opines, for example, that Uber's use of Trade Secret 111 would save no more than

9  "an hour or two of engineering time" without supporting evidence.  Ex. 8 (McManamon Op. Rep.)

10  ¶ 160.  By contrast, Prof. Hesselink did consider Waymo's R&D time frame and other documents

11  and testimony from both sides of the case.  Dkt. 2201-4 (Op. Rep.) ¶¶ 455-457, 458.

12  **VI.   DEFENDANTS' ARGUMENTS DIRECTED TO PROF. HESSELINK'S OPINIONS INVOLVE FACTUAL ISSUES THAT SHOULD BE DECIDED BY THE JURY**

13

14    Faced with competing expert opinions, it is for the jury to determine which opinion to credit.

15  Defendants' *Daubert* motion is premised on disagreements between Prof. Hesselink and

16  Defendants' experts regarding issues that are based in fact and are therefore should be decided by

17  the jury, not by this Court at the *Daubert* stage.  *See Brocade Communs. Sys. V. A10 Networks, Inc.*,

18  No. C 10-3428 PSG, 2012 U.S. Dist. LEXIS 97907, at *8 (N.D. Cal. July 13, 2012) (denying motion

19  *in limine* where plaintiff did not agree with expert's methods or sufficiency of data because those

20  challengers "go to the weight of the evidence and not to their admissibility").  When an expert's

21  opinions are based on a reliable foundation, as is the case with Prof. Hesselink's opinions here, the

22  expert may testify and the jury decides how much weight to give that testimony.  *Primiano v. Cook*,

23  598 F.3d 558, 565 (9th Cir. 2010).

     **VII.   CONCLUSION**

24    For all of the foregoing reasons, Waymo respectfully requests that the Court deny

25  Defendants' motion to exclude Prof. Hesselink's saved development time opinions.

26

27

28    [2]  *See* Ex. 6 (CV of Defendants' Expert, Michael Lebby).

1   DATED:  November 20, 2017                    QUINN EMANUEL URQUHART & SULLIVAN,
                                                 LLP
2

3                                                By  */s/ Charles Verhoeven*
                                                     Charles Verhoeven
4                                                    Attorneys for WAYMO LLC

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28